Orion L Microplate Luminometer

Another bright instrument from the specialist for luminometers

Berthold
DETECTION SYSTEMS

Orion L Superior Engineering and Design

With more than 3000 microplate luminometers produced, and many innovations brought to the field, Berthold Detection Systems is the acclaimed leader in the field of luminescence measurement.

Compact and affordable, powerful and reliable

The new Orion L Microplate Luminometer is a compact, very affordable and user-friendly instrument, which uses high quality materials and advanced technologies. The built-in USB port is an added feature allowing lab users to keep up with ever changing PC demands. This advanced luminometer will plug and play with any Windows PC. Very easy to maintain and upgradeable, it will be an asset to every laboratory. With the optional validation tools, verification of full functionality is performed automatically. Generic data format for result output ensure integrity of your original measurement data.

Applications

· Reporter Gene Assays
(Single and Dual Reading e.g. Dual Luciferase® Reporter Assay)
· ATP Assays
· Luminescent Immunoassays (LIA and ILMA)
· Enzyme Assays (ATP or NAD(P)H)
· Nucleid Acid Probe Assays
· Aequorin-based Ca^{++} Assays
· Kinase Assays
· Receptor Assays
· SNP Genotyping (READIT®)
· Dioxin contamination
· Mycoplasma contamination (MycoAlert®)
…and many more.

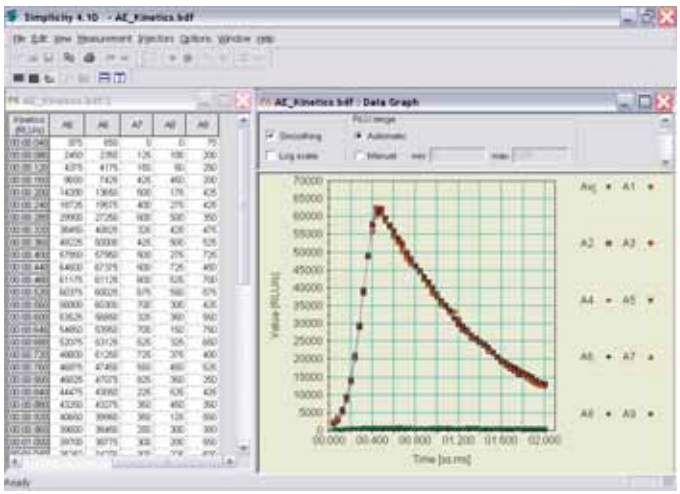
DLR ready

Sample format

The Orion L will accept any luminescence-grade microplates in either white or black. The best sensitivity is obtained with white microplates. Recommendations for quality microplates are available on request, and the instrument is furnished with an initial supply of quality microplates.

Reagent injection

The Orion L is available with up to two high precision automatic reagent injectors. The injection profile is optimised for efficient and fast mixing of the reagents in the microplate well. The excellent match of all hydromechanical and electrical components in the injection system design lead to extremely accurate reproducibility of a flash reaction.
All components of the injection system are easily accessible for maintenance, and do not require any special tools.

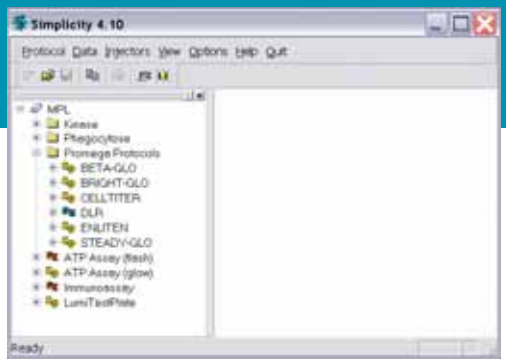


Highest reproducibility in a flash reaction:

The combination of high precision injection and fast photon counting ensures excellent reproducibility of replicate measurements both in terms of raw data and kinetic curve shape.

Simplicity Intuitive and Powerful Software

Select preset protocol to start measuremnt



Simplicity – Automated Measurement Protocols

Simplicity is structured in the form of protocols allowing automation of all steps from defining measurement parameters to reporting final results. By implementing different protocol types, user can define customized protocols for immediate use or store them for later availability. The Simplicity protocol dialogue allows modifications of injection volume, delay time and measurement duration.

Simplicity – Protocol For Basic Applications

The basic module of Simplicity software consists of a standard Raw Data protocol. The measuring time can be set upwards from 0.1 s. The results are reported as RLU/s. The data is presented as a spreadsheet and may be printed upon completion of measurement or saved in different formats. In addition, Simplicity features automatic data transfer to Excel®.

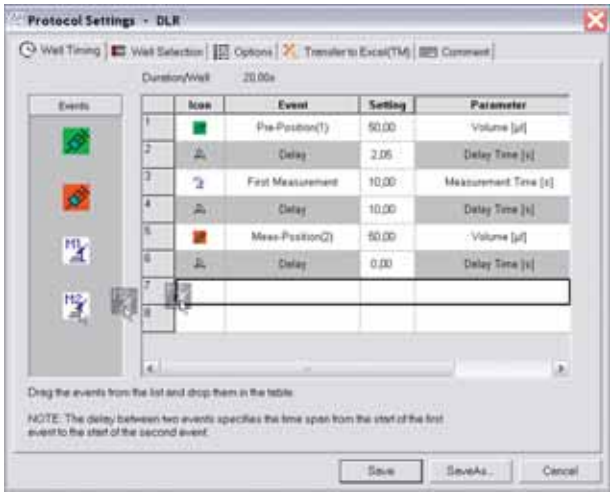
Fast Kinetics Protocol

Fast Kinetics protocol enables user to monitor changes in luminescence per individual well. The total measuring time is pre-selected by the user. Duration of the measurement is divided into 50 data points, allowing a maximum time resolution of 2 ms. Measurement results are available as tables (kinetics and integral) and graphs. Graphical functions include: smoothing, averaging of selected samples, logarithmic scale, auto or selectable scale. Curve calculation functions include peak height (RLU/s and time), integral RLU/s of measurement, time of half maximum (rising) and time of half maximum decay.

Dual Measurement Protocol

This protocol allows measuring of each well twice. It is typically used for dual reporter gene assays. Sequential injections and measurements can be easily implemented. For example, perform the first measurement after injection of reagent one, followed by another injection with reagent two, and subsequent second measurement.

If an existing protocol needs to be modified, or a new one is to be created, this is an entirely self-explanatory, easy process (Drag & Drop).



More than just an instrument – Lifetime service and support

Validation Tools

Our goal is to ensure that your instrument will be in excellent condition for the lifetime of the product. If there is a need to prove and document proper function of the luminometer, Berthold Detection Systems offers a full line of quality validation tools: The Luminescence TestPlate has stable light sources which span over the entire dynamic range of the luminometer. Packaged with our intuitive and comprehensive software, the Luminescence TestPlate makes automatic detector validation an easy task. Finally, our IQ/OQ/PQ documentation packages include all necessary instructions to test and document all instrument functions, meeting even the most demanding laboratory regulations (such as pharmaceutical R&D, and clinical product manufacturing).

Outstanding After Sales Support

Selling an instrument is only the beginning of the relationship for us. Our experienced and customer-oriented staff is looking forward to help you with any inquiry, request for assistance or troubleshooting issue.

Luminescence TestPlate with accessories

IQ/OQ/PQ documentation packages

Orion L Technical Data

Microplate Luminometers with USB and serial connection –
available only from Berthold Detection Systems

Luminometer	
Sample Format	96-well microplate, opaque in solid or strip format.
Detector	Photomultiplier tube with bialkali cathode, effective spectral sensitivity range 300–600 nm, operated in photon counting mode.
Sensitivity	10 attomole ATP.
Crosstalk	Less than 3×10^{-5}.
Dynamic Range	6 decades.
Measuring Time	0.1–100 s per well.
Injectors	Up to two per Orion L system: one injector in pre-position, one in measurement position.
Injection Volumes	10–150 µl per pump in increments of 1µl.
Injection Pattern	Simultaneous injection into two adjacent wells possible.
Tubing	Chemically inert PTFE tubing and connections (PTFE; KEL-F; glass; PS), easily exchangeable liquid handling system and tips. Minimal dead volume due to short reagent lines (ca. 500 µl).
Priming	Fully automated priming protocol, reagent recovery function.
Automation	Compatible to all known microplate transfer devices.
Interfaces	Serial interface (RS-232) and USB interface for PC.
Dimensions	W 385 mm, D 410 mm, H 290 mm.
Weight	22 kg.
Power	230 V 50 Hz; 115 V 60 Hz.
Power Consumption	65 VA (two injectors).
Storage Temperature	0°C – 40°C.
Operating Temperature	10°C – 30°C.
Humidity	10% – 80% (non condensing).

PC Software	
Platform/Required Hardware	Windows® compatible computer, Pentium-like processor, one available serial or USB port.
Operating System	Windows® 2000, XP, Vista, Windows® 7.
Additional Software	Microsoft Excel™ 2000 or higher (optional).
Standard Configuration	Raw Data.
Additionally Available	Fast Kinetics, Dual Measurement.

Orion L 10/09 – 3000

Berthold Detection Systems GmbH
Bleichstrasse 56–68
D-75173 Pforzheim/Germany

Phone: +49-(0)7231/9206-0
Fax: +49-(0)7231/9206-50
E-Mail: contact@berthold-ds.com
Internet: www.berthold-ds.com

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